CPP 程式設計題

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題目名稱(中文/英文)：Text-based histogram

主要測試觀念： 排版練習

Basics	Functions

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■	C++ BASICS 1	☐	SEPARATE COMPILATION AND NAMESPACES
☐	FLOW OF CONTROL	☐	STREAMS AND FILE I/O
■	FUNCTION BASICS	☐	RECURSION
☐	PARAMETERS AND OVERLOADING	☐	INHERITANCE
■	ARRAYS	☐	POLYMORPHISM AND VIRTUAL FUNCTIONS
☐	STRUCTURES AND CLASSES	☐	TEMPLATES
☐	CONSTRUCTORS AND OTHER TOOLS	☐	LINKED DATA STRUCTURES
☐	OPERATOR OVERLOADING, FRIENDS,AND REFERENCES	☐	EXCEPTION HANDLING
■	STRINGS	☐	STANDARD TEMPLATE LIBRARY
☐	POINTERS AND DYNAMIC ARRAYS	☐	PATTERNS AND UML

題目說明： Generate a text-based histogram for a quiz given to a class of students. The quiz is graded on a scale from 0 to 5. Write a program that allows the user to enter grades from a file "grade.txt" for each student. As the grades are being entered, the program should count, using an array, the number of 0's, the number of 1's, the number of 2's, the number of 3's, the number of 4's, and the number of 5's. The program should be capable of handling an arbitrary number of student grades,and write the histogram count to a file "grades.Output".

輸入說明： If the input grades are 3 0 1 3 3 5 5 4 5 4

輸出說明： The program should output

     1 grade(s) of 0
     1 grade(s) of 1
     0 grade(s) of 2
     3 grade(s) of 3
     2 grade(s) of 4
     3 grade(s) of 5

IO 範例 ：

	Sample Input	Sample Output
第一組測資與輸出	3 0 1 3 3 5 5 4 5 4	1 grade(s) of 0 1 grade(s) of 1 0 grade(s) of 2 3 grade(s) of 3 2 grade(s) of 4 3 grade(s) of 5
第二組	0 5 0 5 0 4 5 5 4 3 4 5 1 4 1 5 5 1 4 3 5 5 0 1 1 1 1 3 0 1 1 5 4 4 4 2 2 4 1 2 3 2 2 0 2 2 0 4	7 grade(s) of 0 10 grade(s) of 1 7 grade(s) of 2 4 grade(s) of 3 10 grade(s) of 4

		10 grade(s) of 5
第三組	3 0 4 1 2 1 1 4 2 0 2 0 4 5 2 5 4 3 4 5 2 5 4 4 3 3 1 5 1 0 4 2 0 4 0 3 2 0 3 2 2 3 5 2 0 2 0 3 4 1 4 3 1 0 5 1 4 5 1	10 grade(s) of 0 9 grade(s) of 1 11 grade(s) of 2 9 grade(s) of 3 12 grade(s) of 4 8 grade(s) of 5

附屬資料：
☑解答程式：textBasedHistogram.cpp(檔名)
☑測試資料：grade.txt, grades.Output

■ 易，僅需用到基礎程式設計語法與結構
□中，需用到多項程式設計語法與結構
□難，需用到多項程式結構或較為複雜之資料型態或結構

解題時間：30 分鐘。

其他註記：